

**SONY®**

# White paper

May 2012



**XPERIA acro S**  
LT26w

# Purpose of this document

---

Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

## Document history

---

### Version

May 2012	First released version	Version 1
----------	------------------------	-----------

## Sony Mobile Developer World

---

For the latest technical documentation and development tools, go to <http://developer.sonymobile.com/wp>.

This White paper is published by:

Sony Mobile Communications AB,  
SE-221 88 Lund, Sweden

[www.sonymobile.com](http://www.sonymobile.com)

© Sony Mobile Communications AB, 2009-2012.  
All rights reserved. You are hereby granted a  
license to download and/or print a copy of this  
document.  
Any rights not expressly granted herein are  
reserved.

First released version (May 2012)  
Publication number: 1265-2418.1

This document is published by Sony Mobile Communications AB, without any warranty\*. Improvements and changes to this text necessitated by typographical errors, inaccuracies of current information or improvements to programs and/or equipment may be made by Sony Mobile Communications AB at any time and without notice. Such changes will, however, be incorporated into new editions of this document. Printed versions are to be regarded as temporary reference copies only.

\*All implied warranties, including without limitation the implied warranties of merchantability or fitness for a particular purpose, are excluded. In no event shall Sony or its licensors be liable for incidental or consequential damages of any nature, including but not limited to lost profits or commercial loss, arising out of the use of the information in this document.

# Table of contents

<b>Product overview .....</b>	<b>4</b>
Sony Xperia™ acro S – Experience everything in HD .....	4
Signature features .....	5
Facts – dimensions, weight, performance and networks .....	6
Categorised feature list .....	8
 <b>Technologies in detail .....</b>	 <b>10</b>
Device-to-device communications (local) .....	10
Bluetooth™ wireless technology .....	10
Wi-Fi® .....	11
DLNA Certified® (Digital Living Home Alliance).....	12
Messaging .....	13
MMS (Multimedia Messaging Service).....	13
Email .....	13
Positioning – location based services .....	14
Provisioning (OMA CP) .....	14
Multimedia (audio, image and video) .....	15
Synchronisation (OMA DS, EAS, Google Sync™) .....	16
Web browser .....	17
Trademarks and acknowledgements .....	18

# Product overview

## Sony Xperia™ acro S – Experience everything in HD

Happy faces, remarkable places. Shoot them in HD video and see them shine back from the crisp clear HD display. Then move on to a wider world of entertainment. Movies, hit music, PlayStation® games. And don't keep all the fun to yourself.

### See every detail

See every inch of that award-winning actor. Zoom in on every detail of your favourite TV show. Experience videos and photos in deep, vivid, colour on the large, bright 4.3" HD Reality Display with Mobile BRAVIA® Engine. Sharp pictures. No jagged edges. Merely the terrific entertainment in HD.

### Snap your shots in an instant

Some events are too good to miss. Now you don't have to. Start your camera in just over a second. Pointing and shooting takes one second too. And you can keep on shooting. No delays, no missing the subject. Just you capturing that special moment forever. Then share it direct, on Facebook™ or in a message.

### Show it like it is

First day of the summer, last day at the beach. Memories may fade, but Xperia™ acro S keeps them bright. Record it all in HD video with the 12.1 megapixel camera, even in low light. The Exmor R™ for mobile camera sensor lightens up any gloomy day.

### Got it on your smartphone? Share it on your TV

Want to be entertained? Download a movie from Video Unlimited™\*. Connect Xperia™ acro S to an HD TV with an HDMI cable and the TV launcher pops up automatically. Now use your phone to play, fast forward, or enjoy your favourite scene again.

\*Sony Entertainment Network with Video Unlimited™ and Music Unlimited™ are not available in all markets. Additional charges may apply.



## Signature features

---

The Sony Xperia™ acro S comes with a range of features as standard. Below is a summary of the key signature features.

### Xperia™ Timescape™

#### **Communication made easy**

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™ and Twitter™ communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

### Xperia™ Infinite button

#### **Everything you want – from everywhere**

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

### Xperia™ Local connectivity

#### **More control over your media**

Using Xperia™ Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption or select MSC mode if you want to have more control over the data storage.

### Xperia™ Home screen application

#### **The place you call Home**

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items. Where's best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you've got plenty of space to put things where you want. Just remember to flick left or right to find them.

# Facts – dimensions, weight, performance and networks

---

<b>Operating system</b>	Google™ Android™ 4.0 (Ice Cream Sandwich)
<b>Processor</b>	1.5 GHz Qualcomm MSM8260 Dual Core
<b>GPU</b>	Adreno™ 220
<b>Size</b>	126 x 66 x 11.9 mm
<b>Weight</b>	147 grams
<b>Available colours</b>	Black White Pink
<b>Main screen</b>	
Colours	16,777,216 colour TFT
Resolution	1280x720 pixels
Size (diagonal)	4.3 inches
Scratch-resistant	Shatter-proof sheet on scratch-resistant glass
<b>Input mechanisms</b>	
Text input	on-screen 12 key keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 10 fingers supported
<b>Memory</b>	
Internal phone storage	16 GB*** (up to 11 GB user-accessible memory)
RAM	1 GB
Expansion slot	microSD™ card, up to 32 GB
<b>Camera</b>	
Camera resolution	12.1 MP
Digital zoom	16x
Photo flash	Yes – Pulsed LED
Video recording	Yes – HD 1080p
Front Camera	Yes – HD 720p for video chat and 1.3 MP for camera capture
<b>Sensors</b>	
Accelerometer	Yes
Proximity sensor	Yes
Ambient light sensor	Yes**

Magnetometer	Yes
Gyroscope	Yes
<b>Networks</b>	
LT26w	HSPA+ 850 (Band V), 900 (Band VIII), 1900 (Band II) and 2100 (Band I) GSM 850/900/1800/1900
<b>Data transfer speeds</b>	
GSM GPRS	Up to 86 kbps
GSM EDGE	Up to 237 kbps
UMTS HSPA cat 6 (upload)	Up to 5.8 Mbps
UMTS HSPA cat 10(download)	Up to 14.4 Mbps
<b>Talk time (GSM)</b>	Up to 6 hours 40 min.*
<b>Standby time (GSM)</b>	Up to 290 hours*
<b>Talk time (UMTS)</b>	Up to 7 hours 10 min.*
<b>Standby time (UMTS)</b>	Up to 310 hours*
<b>Music listening time</b>	Up to 23 hours*
<b>Video playback time</b>	Up to 6 hours 30 min.*
<b>Embedded Battery</b>	1910 mAh typical 1840 mAh minimum

\*\*\* Some portion of the capacity may be used by pre-installed applications.

\*\* There is no API for the light sensor.

\* Values are according to GSM Association *Battery Life Measurement Technique* as performed in controlled laboratory conditions. Actual time may vary.

**NOTE:** All performance metrics are measured under laboratory conditions.

**NOTE:** Battery performance may vary depending on network conditions and configurations, and phone usage.

## Categorised feature list

 <h3>Camera</h3> <ul style="list-style-type: none"> <li>3D Sweep Panorama™</li> <li>12.1 megapixel camera</li> <li>16x digital zoom</li> <li>Auto focus</li> <li>Aperture f/2.4</li> <li>Exposure value</li> <li>Face detection</li> <li>Flash/Pulsed LED</li> <li>Front-facing camera (1.3 MP)</li> <li>Geotagging</li> <li>HD video recording (1080p)</li> <li>Image stabiliser</li> <li>Red-eye reduction</li> <li>Send to web</li> <li>Self-timer</li> <li>Smile detection™</li> <li>Sony Exmor R™ for mobile image sensor</li> <li>Touch capture</li> <li>Touch focus</li> <li>Video light</li> <li>Video recording</li> <li>Video stabiliser</li> <li>White balance</li> </ul>	 <h3>Music</h3> <ul style="list-style-type: none"> <li>Album art</li> <li>Bluetooth™ stereo (A2DP)</li> <li>Music tones (MP3/AAC)</li> <li>PlayNow™ service*</li> <li>Walkman Player</li> <li>TrackID™ music recognition*</li> <li>xLoud™ Experience</li> </ul>	 <h3>Internet</h3> <ul style="list-style-type: none"> <li>Bookmarks</li> <li>Google Maps™ for Mobile with Google Latitude™ and Street View*</li> <li>Google Play™</li> <li>Google™ search*</li> <li>Google Voice™ Search*</li> <li>Pan &amp; zoom</li> <li>Web browser (WebKit™)</li> </ul>
 <h3>Communication</h3> <ul style="list-style-type: none"> <li>Call list</li> <li>Google Talk2™ application*</li> <li>Facebook™ application*</li> <li>Noise Suppression</li> <li>Polyphonic ringtones</li> <li>SIP</li> <li>Xperia™ Timescape™</li> <li>Speakerphone</li> <li>Twitter™ (Timescape™ integration)*</li> <li>Vibrating alert</li> </ul>	 <h3>Messaging</h3> <ul style="list-style-type: none"> <li>Conversations</li> <li>Email</li> <li>Google mail™*</li> <li>Instant messaging</li> <li>Predictive text input</li> <li>Sound recorder</li> <li>Text messaging (SMS)</li> </ul>	 <h3>Design</h3> <ul style="list-style-type: none"> <li>Auto rotate</li> <li>Gesture input</li> <li>Gyroscope</li> <li>On-screen QWERTY keyboard</li> <li>On-screen 12 key keyboard</li> <li>HD Reality Display with Sony Mobile BRAVIA® ENGINE</li> <li>Screenshot capturing</li> <li>Touch screen</li> <li>Dustproof (IP5X) and Water resistant (IPX5/7)</li> <li>Wallpaper</li> <li>Wet finger tracking</li> </ul>

 <p><b>Entertainment</b></p> <p>3D games Media browser Motion gaming PlayStation® Certified Radio (FM radio with RDS) Sony Entertainment Network* TV launcher Video streaming YouTube™*</p>	 <p><b>Organiser</b></p> <p>Alarm clock Airplane mode Calculator Contacts Document readers eCompass™ Infinite button OfficeSuite Pro Setup guide Widget manager</p>	 <p><b>Connectivity</b></p> <p>3.5 mm audio jack (CTIA) aGPS* Bluetooth™ wireless technology DLNA Certified® GLONASS* HDMI support Media Transfer Protocol support Micro USB support Native USB tethering NFC** PC Companion Synchronisation via Microsoft® Exchange ActiveSync® USB mass storage USB High speed 2.0 support Wi-Fi® Wi-Fi® Hotspot functionality</p>
--	--	---

\* This service is not available in all markets.

\*\* Not available for payments.

# Technologies in detail

**NOTE:** The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Mobile Developer World or your Sony contact person where applicable.

## Device-to-device communications (local)

---

### Bluetooth™ wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v.1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0 Serial Port Profile v1.1 Personal Area Network Profile v1.0 Human Interface Device Profile v1.1 Health Device Profile v1.0
Core version and supported core features	BT3.0
Connectable devices	Products supporting at least one of the profiles above.

More information:

<http://developer.sonymobile.com/wp>

[www.bluetooth.com](http://www.bluetooth.com)

## Wi-Fi®

Supported standards	IEEE 802.11b/g/n and Wi-Fi®
Connectable devices	Wi-Fi® access points
Frequency band	2.4 GHz
Data transfer rate	Up to 72 Mbit/s
Security	WEP 64 bit WEP 128 bit TKIP CCMP (AES) Open Authentication Shared Authentication EAP-SIM EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP, TKIP and AES
Power save	WMM-UAPSD QoS, WMM
Auto setup	WPS

## DLNA Certified® (Digital Living Home Alliance)

Supported Device Classes	<p><b>M-DMS – Mobile Digital Media Server</b>  Media Types: images, video and music  Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The files can then be accessed from other DLNA Certified® clients.</p> <p><b>+PU+</b>  Media Types: image, video and music  Summary: Play media in the phone on another device, such as a TV or computer using 2-box push technology. +PU+ is integrated into the Gallery and Music applications.</p> <p><b>M-DMP – Mobile Digital Media Player</b>  Media Types: image, video and music  Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.</p> <p><b>+DN+</b>  Media Types: image, video and music  Summary: Download content stored on another device, for example, a server or a PC, and play the downloaded content directly on the phone.</p>
Supported Bearers	Wi-Fi®
DRM Support	The Sony DLNA Certified® implementation does not support DRM-protected content.

# Messaging

---

## MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

### Email

Bearer type (IP)	GPRS, EGPRS, UMTS
Character sets	BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes (read only)

### More information:

<http://developer.sonymobile.com/wp>

[www.openmobilealliance.org](http://www.openmobilealliance.org)

## Positioning – location based services

---

Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0
- 3GPP™ Control Plane location (including Emergency location)
- Qualcomm® GPSOneXTRA™

Supported satellite systems:

- GPS
- GLONASS\*

\* **NOTE:** GPS and GLONASS are used together to calculate the position. Positioning is more robust and accurate in most conditions, if both systems are active. The benefits of using GLONASS are automatically available for all applications using the Satellite Positioning API ("GPS Provider" in Android terminology).

## Provisioning (OMA CP)

---

OMA CP version 1.1

## Multimedia (audio, image and video)

<b>Audio Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	Audio decoding MPEG-1/2/2.5, audio layer 3	MP3 (.mp3), 3GPP (.3gp), MP4 (.mp4, .m4a)
	AAC, AAC+, eAAC+	3GPP (.3gp), MP4 (.mp4)
	AMR-NB, AMR-WB	3GPP (.3gp), MP4 (.mp4)
	General MIDI (GM)	SMF (.mid)
	Linear PCM 16bit	WAV (.wav)
	OTA	OTA (.ota)
	Ogg vorbis	Ogg vorbis (.ogg)
	PIFF	PIFF (.isma)
	FLAC	FLAC (.flac)
<b>Audio Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	AMR-NB, AMR-WB	3GPP (.3gp)
	AAC-LC stereo, sample rate 48 kHz bit rate up to 384 kbps	3GPP (.3gp, .3gpp) MP4 (.mp4, .m4a)
<b>Image Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats	BMP (.bmp)
	Single and multi-frame, bitmap mask support (GIF87a format and GIF89a format)	GIF (.gif)
	Joint Photographic Experts Group	JPEG (.jpg)
	Portable Network Graphics Bitmap mask support	PNG (.png)
<b>Image Capture</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	Joint Photographic Experts Group	JPEG (.jpg)
<b>Video Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	MPEG-4 Visual Simple Profile Level 6, Advanced Simple Profile Level 5	3GPP (.3gp), MP4 (.mp4)
	H.264 Baseline/Main/High Profile Level 4	3GPP (.3gp), MP4 (.mp4)
	H.263 Profile 0, Profile 3 Level 70	3GPP (.3gp)
	VP8	WebM (.webm)
	PIFF	PIFF (.ismv)

<b>Video Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	Video H.263 Profile 0, H.264 Baseline Profile Audio: AAC-LC stereo, sample rate 48 kHz, bit rate 128 kbps, AMR-NB	3GPP (.3gp), MP4 (.mp4)
<b>Audio/Video Streaming</b>	Streaming transport	RTSP according to 3GPP™ HTTP streaming
<b>DRM</b>	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM 1.0 Marlin DRM PlayReady™

## Synchronisation (OMA DS, EAS, Google Sync™)

---

OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Google Sync™

Related information:

<http://developer.sonymobile.com/wp>

## Web browser

---

Browser version	Android 4.0 Browser (Based on WebKit™)
Browser Application	Bookmark synch Desktop mode Full-page PC rendering Internet search Landscape/portrait rendering Off-line reading Pan & Zoom
Browser compliancy	CSS 2.0 CSS 2.1 CSS 3.0 DOM 2.0 DOM 3.0 HTML version. 4.0 HTML version. 5.0 JavaScript 1.7/ECMA-script 262 3rd edition WebGL 1.0 XHTML Basic version 1.0 XHTML 1.1 SVG 1.1
Supported Device API	Geo-location API Device orientation API File reader API Touch events API (including multi-touch)
Protocol compliancy	Gzip HTTP/1.1 OMA Download 1.0 TLS 1.0 and SSL 3.0

Related information:

<http://developer.sonymobile.com/wp>

## Trademarks and acknowledgements

---

The Liquid Identity and Liquid Energy logos, PlayNow, TrackID, Xperia and Timescape are trademarks or registered trademarks of Sony Ericsson Mobile Communications AB. Sony, "make.believe", Exmor R, xLoud, Sweep Panorama, Music Unlimited, Video Unlimited and Mobile BRAVIA Engine are trademarks or registered trademarks of Sony Corporation. Ericsson is a trademark or registered trademark of Telefonaktiebolaget LM Ericsson. PlayStation and PlayStation Certified are trademarks or registered trademarks of Sony Computer Entertainment, Inc.

The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Sony is under licence. TrackID is powered by Gracenote Mobile MusicID. Gracenote and Gracenote Mobile MusicID are trademarks or registered trademarks of Gracenote, Inc.

Google, Gmail, Google Calendar, Google Latitude, Google Maps, Google Places, Google Talk, Google Search, Google Sync, Google Mail, Picasa, YouTube, Google Voice, Android and Google Play are trademarks or registered trademarks of Google, Inc. Facebook is a trademark or registered trademark of Facebook, Inc. Twitter is a trademark or a registered trademark of Twitter, Inc.

Wi-Fi is a trademark or registered trademark of the Wi-Fi Alliance. DLNA and DLNA Certified are trademarks or registered trademarks of the Digital Living Network Alliance. microSD is a trademark or registered trademark of SanDisk Corporation. XHTML is a registered trademark of the W3C. eCompass is a trademark or registered trademark of Genoptix, Inc.

Microsoft, Windows, PlayReady, and ActiveSync are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

3GPP™ is a trademark of ETSI.

Need for Speed, the "N" icon and the Need for Speed logo are trademarks of Electronic Arts Inc.

Java, JavaScript and Java-based trademarks and logos are trademarks or registered trademarks of Oracle America, Inc., in the U.S. and other countries. End-user license agreement for Oracle Java Platform, Micro Edition. 1. Restrictions: Software is confidential copyrighted information of Oracle and title to all copies is retained by Oracle and/or its licensors. Customer shall not modify, decompile, disassemble, decrypt, extract, or otherwise reverse engineer Software. Software may not be leased, assigned, or sublicensed, in whole or in part. 2. Export Regulations: Software including technical data, is subject to U.S. export control laws, including the U.S. Export Administration Act and its associated regulations, and may be subject to export or import regulations in other countries. Customer agrees to comply strictly with all such regulations and acknowledges that it has the responsibility to obtain licenses to export, re-export, or import Software. Software may not be downloaded, or otherwise exported or re-exported (i) into, or to a national or resident of, Cuba, Iraq, Iran, North Korea, Libya, Sudan, Syria (as such listing may be revised from time to time) or any country to which the U.S. has embargoed goods; or (ii) to anyone on the U.S. Treasury Department's list of Specially Designated Nations or the U.S. Commerce Department's Table of Denial Orders. 3. Restricted Rights: Use, duplication or disclosure by the United States government is subject to the restrictions as set forth in the Rights in Technical Data and Computer Software Clauses in DFARS 252.227-7013(c) (1) and FAR 52.227-19(c) (2) as applicable.

Qualcomm, Adreno, and GPSOneXTRA are trademarks or registered trademarks of Qualcomm, Inc.

WebKit is a trademark or registered trademark of Apple, Inc. All other trademarks and copyrights are the property of their respective owners. Some features described herein require supporting services. Usage charges may apply for such service.